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AMERICAN SCHOOL HEALTH ASSOCIATION

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Xol. XIX APRIL, 1949 No. 4

CONTENTS

The National Conference on Undergraduate Professional Preparation in Health Education, Physical Education and Recreation 83

H. F. Kilander, Ph.D.

The School Physician and the School Dental Health Program 91

Wm. E. Ayling, M.D.

Diagnostic Values to Pupils of Health Education Tests 97

Willard Walter Patty

Rheumatic Fever and the School Child 105

Committee Report—Am. Acad. of Pediatrics

Editorial 110

Abstracts and Notes 109, 111

Review 112

Meetings 112

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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XIX APRIL, 1949 No. 4

THE NATIONAL CONFERENCE ON UNDERGRADUATE PROFESSIONAL PREPARATION IN HEALTH EDUCATION, PHYSICAL EDUCATION AND RECREATION[1]*

H. F. KILANDER

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U. S. Office of Education, Federal Security Agency
Washington 25, D. C.

The National Conference on Undergraduate Professional Preparation in Health Education, Physical Education and Recreation was held at Jackson's Mill, Weston, West Virginia, May 16-27, 1948.

The writer had the privilege of representing the American School Health Association at the request of its president, Dr. David Van Der Slice. Our Association was one of nine sponsoring organizations whose representatives served on the Conference Steering Committee.

The Purpose of the Conference. The purpose of the Conference was to improve the undergraduate professional preparation in health education, physical education and recreation by:

1. Developing recommended programs of professional preparation for general classroom teachers, teachers and leaders in health education, physical education and recreation;
2. Developing suggested standards to serve as guides for institutions engaged in the professional preparation of personnel in areas such as staff, facilities and equipment, resource materials, selective recruitment and guidance, curricula, including student teaching, and teaching load;
3. Relating the work of the Conference to the sponsoring and cooperating groups and to similar groups or agencies at the national, regional and state levels;

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1 *The National Conference on Undergraduate Professional Preparation in Physical Education, Health Education and Recreation.* The Athletic Institute, 209 South State Street, Chicago 4, Illinois, 40 pp. $1.00 postpaid.

* Presented before the American School Health Association, Boston, Mass., November 8, 1948.

4. Improving the professional preparation, professional consciousness and professional standing of health education, physical education and recreation personnel;
5. Developing suggestions relating to the distribution, interpretation and general acceptance by the profession of the recommendations of the Conference.

It was the avowed purpose of the Conference not to serve as an accrediting agency nor to suggest the machinery for accreditation. Furthermore, in line with the principle of institutional autonomy, specific reference was not made to course titles and credits. It is hoped, however, that the material contained in the report will be useful to educational institutions in the development and evaluation of their respective programs for the preparation of teachers.

In no sense should the report be considered as a static document or a solution to all pertinent problems related to the professional preparation of teachers in health education and physical education, and leaders in recreation.

Background of the Conference. The National Conference on Undergraduate Professional Preparation in Health Education, Physical Education and Recreation was the first of its kind in the United States.

The need for such a Conference has been evident for several years. Following the explanation of this fact to Mr. Theodore P. Bank, President of the Athletic Institute, he obtained approval of his Board of Directors to finance the Conference.

In December 1947, Mr. Bank requested the presidents of three national associations (American Association for Health, Physical Education, and Recreation; American Recreation Association; and the College Physical Education Association) to appoint representatives. These met with him in January 1948. The group agreed on the need for the conference, and voted to accept the Athletic Institute's offer. There also was complete agreement that close inter-relationships exist in health education, physical education and recreation and that the Conference should concern itself with those three areas.

The Organization and Makeup of the Conference. The following nine organizations were invited to become sponsors of the Conference: American Association for Health, Physical Education, and Recreation; American Association of Colleges for Teacher Education; American Recreation Society; American School Health Association; The Athletic Institute; College Physi-

cal Education Association; National Association for Physical Education of College Women; National Recreation Association; and the Society of State Directors of Health, Physical Education, and Recreation. In addition, 19 other organizations and agencies served as Cooperating Groups.

Separate committees were set up for each of the three areas—health education, physical education, and recreation — with about 15 participants in each. The participants had been so selected that each committee reflected differences in background and responsibilities from various sections of the country. Six individuals served as consultants. Including the members of the executive committee, the total number in attendance during the Conference was 56.

The Executive Committee of the Steering Committee and of the Conference consisted of the following: Chairman, Dr. Carl L. Nordly; Vice-Chairman, Mr. Thomas C. Ferguson; Secretary, Mr. Milo F. Christiansen; Director of the Conference, Dr. William L. Hughes; Conference Treasurer, Mr. Theodore P. Bank; Chairman of the Health Education Area, Dr. Charles C. Wilson; Chairman of the Physical Education Area, Dr. Harry A. Scott, and Chairman of the Recreation Area, Mr. Charles K. Brightbill.

Responsibility of the College and University for the Preparation of Competent Leaders and Teachers. The Conference expressed its viewpoints as follows:

> Institutions of higher education have a responsibility for preparing competent teachers and leaders in health education, physical education and recreation. Too frequently this principle has been violated by institutions not qualified to give adequate preparation in these areas.
>
> This report reflects a basic philosophy and indicates the essential factors which should be considered in the education of such leaders.
>
> A college or university should accept responsibility for the preparation of teachers and leaders only to the extent that it is able to discharge this responsibility effectively.

Recommendations of the Conference

Each of the three committees deliberated over the two-week period in regard to the preparation desirable in their respective fields. Each committee report was also discussed by the entire Conference. The 40-page report covers these points. Here we shall summarize some of the recommendations.

The General Education of Teachers. The Conference strongly endorsed general education as a unifying element in democracy. The Health Education Committee expressed the viewpoint that the broad background furnished by general education will bring to the health education student understanding of the factors that have operated to produce the culture within which he lives; will introduce him to a knowledge of himself and others; and will lay additional foundations for his future work in health through acquaintance with the special contributions made in the areas of physical education, recreation and allied fields.

General education represents the adjustment of education to the needs of our people and establishes common ground as a basis for cooperative action so greatly needed in this country. Agreement was had on the objectives of general education as set forth in the recent report of the President's Commission on Higher Education.[2]

The Professional Education of Teachers. In the professional education for all teachers, including those in these three areas, attention was given to principles of selection and guidance, personal qualifications, and professional competencies. Specific statements from the report are as follows:

> "Professional education, properly conceived and integrated into a functional program, is concerned first of all with securing the best potential teachers and leaders through selective admission and guidance.
>
> "Through the curriculum of professional education he becomes acquainted with children, how they grow and how they learn. He is initiated into the skills and the art of teaching.
>
> "If the desired professional competencies are to be present when leadership responsibilities are assumed, the professional education program must go far beyond a course-making pattern. Much in the way of direct contact with children, youth and adults, schools and communities must be introduced. Enough supervised, responsible observation and field experience should be provided to reduce to a minimum the trial and error of the beginner."

Common Factors in the Preparation of Teachers in Health Education, Physical Education and Recreation. The present situation, as regards the undergraduate preparation of teachers in

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2 President's Commission on Higher Education, *Higher Education for American Democracy*, Volume I, "Establishing the Goals," pp. 50-58. U. S. Government Printing Office, Washington 25, D. C., 1947. 103 pp. $.40.

the three areas, is usually that of a college preparing in more than one of the three fields and with the same staff involved. There are very few instances of colleges preparing only for health education, or physical education, or recreation.

For these reasons, certain factors common to specialized professional education in the three areas were considered jointly, as well as separately, by the Conference. These included: accreditation of the college, staff, facilities, curriculum, recruitment, selection and guidance; placement and follow-up, laboratory and field experience, in-service education, the elementary school classroom teacher, graduate study, resources and evaluation.

The report states that the curricula should be based upon functions to be performed and should provide identification in each of the three areas.

In regard to in-service education the Conference stressed that this was a common need and that "due to the dynamic nature and the inherent relationships to individual and community life of health education, physical education and recreation, it is especially important that individuals in the areas be provided, through coordinated action of many groups, experiences which result in improvement of the quality and effectiveness of the work in which they are engaged."

The Need for Leaders in Health Education. The Conference stated that in its broadest sense the scope of responsibilities for which leaders are needed in the three areas include promotion, organization, interpretation, program planning and operation, teaching, supervision and general administration. As regards health education the report reads as follows:

> "Elementary schools need health educators to serve as resource persons and leaders in the school health program. Each secondary school with 100 to 150 students enrolled in the health courses, with health classes meeting daily, needs a full-time health teacher. Smaller secondary schools need a qualified health teacher who is competent also in some other area, or who carries health education responsibilities in other situations.
>
> "As part of their general education faculty, colleges should have health educators to plan and arrange learning experiences in health to meet the needs for all students.
>
> "Institutions preparing teachers needs to provide all prospective teachers with the understandings, attitudes and abilities required to fulfill the health responsibilities that will be theirs when they start teaching.

"Community groups need leaders in health education to aid them in identifying, studying and solving their own health problems. Many health departments and local voluntary health agencies consider health educators as essential members of their professional health team. The demand for personnel competent to work in the community is increasing far more rapidly than individuals are being prepared to do the work."

Professional Preparation in Health Education. Although there are separate sets of recommendations in the report for each of the three areas considered by the Conference, for our purpose today, we shall consider only health education. Some of the views expressed in the report in regard to the responsibilities of teacher-training institutions are as follows:

"The prospective teacher of health has need for further intensive study (in addition to general education and general professional education) to develop the competencies expected of him . . . The health sciences and social sciences make equally important contributions to his further growth. Those who plan the curriculum should seek within these sciences the materials and experiences which will be meaningful in terms of the special understandings and skills needed by the prospective health teacher. Traditional courses and traditional classroom laboratory exercises are not suitable to prepare the health teacher for his work in schools and communities.

"Some of the experiences will be found in life within the college itself: the underlying philosophy of the teacher preparation, the way in which the college health services are conducted, and the attention to students' personal needs and interests. These supplement the organized learning experiences which the prospective health teacher should have.

"The major objective of health education is to contribute to healthful living for all people.

"The school can contribute to the realization of this general objective by guiding students in learning experiences which will enable them to direct intelligently their own health behavior and to assume their responsibilities for the health of others; by attending to factors in the school and community environment which affect daily living; and by operating health services which provide a basis for health protection and improvement.

"These contributions can be organized effectively into the

three aspects of school education designated as health instruction, healthful school living and health services.

"While the administration of the total program is the responsibility of the school administrator, he often delegates certain aspects of his responsibility to the health teacher.

"The undergraduate preparation of health teachers should include those experiences which will enable them to function satisfactorily in each of these areas.

"The organization of the program for preparation in the three areas of school health education should be approached from the standpoint of the interrelationships which exist between them.

"No one of the areas is an entity in itself. The competencies needed for service in one area will complement and supplement those needed in the other two."

Functions of Health Teachers in the Health Instruction Program. The organization and direction of curricular experiences in health education for children and youth is a major function of health teachers. To prepare health teachers to fulfill this function, the undergraduate program should develop the competencies necessary to:

Identify the health needs and interests of students in relation to their physical and social environment;

Plan and conduct teaching activities to meet these needs and interests;

Integrate the classroom health activities with the community health program.

Competencies are listed for knowledge, skills and attitudes.

Functions of Health Teachers in the Program for Healthful School Living.

The Conference recommends that:

The health teacher should be prepared to assist with the development of an environment in which the student can best live and grow. Emotional and social aspects, as well as physical factors in the environment, must supplement and complement health instruction and the health services.

In order to fulfill his responsibilities the health teacher should:

Share with the administrator and other school personnel in achieving and maintaining a healthful school environment;

Assist school personnel and students in developing a coordinated plan of action that will provide an environment conducive to the development of good health practices and attitudes;

Assist with planning and conducting a survey of the school environment to discover factors which significantly affect, either favorably or adverseley, the health of pupils.

Functions of Health Teachers in the Health Service Program. The report states:

> "The health service program in schools is of great complexity and involves the cooperation of many individuals and groups. With the realization of the need for increased emphasis on the educational aspects of the services it becomes important that the health teacher work side by side with physicians, nurses, dentists, dental hygienists, other teachers and parents to see that effective educational approaches are used. Thus, the health teacher's preparation should provide background for appropriate participation in program planning."

The report mentions specifically in what ways the health teacher will need to assist the school administrator and the school medical advisor in planning a program. Also listed are the competencies and learning experiences needed by the health teacher to perform her responsibilities effectively.

Some Suggestions for the Use of the Conference Report. It was the hope of the Conference that teacher education institutions would avail themselves of the report as an aid to self-evaluation. The material is so presented that the administrators and teachers may evaluate present status and practices in terms of the recommendations included. The report can be used in the following ways:

1. To guide in the establishment of curricula;
2. To aid in the preparation of evaluative devices;
3. To aid in evaluating existing professional programs;
4. To serve as a guide for institutions considering the inauguration of programs of professional preparation in one or more of the areas in this report;
5. To assist accreditation and certification agencies in the development of appropriate standards in the three areas;
6. To provide information for recruitment in secondary schools and guidance in colleges;
7. To provide information for discussion at meetings of professional organizations at local, state and national levels;
8. To serve as a basis for discussion groups and workshops of institutions and agencies at local, state and national levels;
9. To stimulate further study and research of problems discussed therein.

THE SCHOOL PHYSICIAN AND THE SCHOOL DENTAL HEALTH PROGRAM*

WILLIAM E. AYLING, M.D.
School Health Director, Syracuse, N. Y.

The finding and correction of physical defects in school children constitute important steps in the prevention of disease, psychological maladjustment and retardation of the education of the child. Among the defects that are discovered as routine examinations of school children, dental caries outnumber all others. In Syracuse, our examinations reveal that no less than 58 per cent of the school children have dental caries. Many communities report a higher percentage, but we have had a good dental program, employing dentists and dental hygienists for over twenty years, and an important result has been to decrease the number of children needing corrective treatments.

At present, our six hygienists serve the kindergarten and first six grades, moving from school to school so that all these pupils receive a thorough dental examination once a year. Dental health education by the dental hygiene teachers and classroom teachers is carried on at the same time, stressing care of the teeth, diet and corrective treatments. Dental prophylaxis (cleaning) is done in grades 1, 3 and 5 thereby getting the child used to the dental chair and the use of instruments in his mouth. Two dentists do corrective work, mainly extractions and fillings, for a limited number of pupils who cannot afford to go to their own dentists. A similar program is carried on by the dental staff in the parochial schools.

The school physicians also inspect the mouths of these pupils as part of the required annual medical examination and have a chance to correlate the findings with the child's general condition. The school examination for dental defects above the 6th grade is entirely in the hands of the school doctors. Pupils found to have dental defects when examined for physical fitness certificates for work permits are rejected or given thirty days in which to have th· corrections made.

A vast amount of research has been done and is being done to determine the cause of dental defects with the ultimate aim of preventing this condition. There are apparently many causes, both local and constitutional, why teeth undergo decay. There must be

*Presented before the Dental Health Section, of the American Publi· Health Association, and the American School Health Association Sessior November 9, 1948, at Boston.

reasons, of course, why some children seldom require the services of a dentist whereas others require almost constant attention. Inherited differences in the ability to resist dental caries may account for a great many of these variations in susceptibility.

"That diet plays an important part in the production of dental caries is beyond question, but there is considerable difference of opinion as to the factors concerned. In parts of the world where the diet includes a large amount of meat, or is high in fats, caries is minimal."[1] Most dental authorities now believe that the formation of acids in the mouth by the action of bacterial enzymes on refined carbohydrates is an important factor in the development of dental caries.[2] There appears to be evidence also that a deficiency of certain vitamins, particularly A, C, and D, and lack of calcium are factors. One must not overlook the fact that in order for vitamins to function in the body in the various enzyme systems, they must have something to work on. This fact is particularly true of protein. We must not lose sight of the fact, also, that normal endocrine balance is dependent on the food that we consume. Thus, it would appear that a balanced diet and adequately functioning endocrine glands are fundamentally concerned in maintaining the teeth in a healthy condition. Conversely, this implies that one would expect to find carious teeth in individuals deficient in certain food elements or having disturbed endocrine balance.

We have made certain observations along the above lines during routine examinations and nutrition studies in the public schools of Syracuse. We feel that these observations are worthy of your attention.

It was observed and reported by one of our school physicians that some children on diets that are deficient in protein show certain deviations from normal. Among the abnormal conditions that were noted may be mentioned,—puffiness of the eyelids, dark circles beneath the eyes, poor postures, flabby muscles, pallor or pale lemon-yellow color of the skin, yellowish discoloration of the teeth, dental caries, leukonychia, or white spots on the nails, hypertrophied tonsils and palpable cervical lymph glands. Conditions of the skin, such as hypekeratosis, i.e., thickening of the skin, and cheilosis (fissures of the lips at the angles of the mouth), usually attributed to lack of certain vitamins, were also noted. Many of the children were fingernail biters.

1. "That diet plays an important part, etc. . . ." Holt, L. E., Jr., and McIntosh, R.; Holt's Diseases of Infancy and Childhood. p. 355, 11th Edit. D. Appleton-Century Co. N. Y., 1939.

2. Metropolitan Life Inc Co., Health Bulletin for Teachers, Vol. XIX, No. 3. Jan. 1948.

There seems to be a close correlation between protein deficiency in children and puffiness of the eyelids and leukonychia. During the routine examination of 1,789 children in four of our public schools, we recorded the number that showed puffiness of the eyes with or without leukonychia and those with leukonychia alone and tried to correlate these with the physical defects that were found. A total of 1,357 (75.8%) of the children in the four schools showed physical defects of some degree. Among those that had these physical defects, 82% had puffiness of the eyes or leukonychia alone or both. Among the 432 children with no detachable physical defects, only 55% had one or both of these conditions.

This study, although limited in extent, appears to indicate that we must not be unmindful of Professor Halbane's dictum, "We must keep the whole organism in view".[3] It also emphasizes Dr. Carlson's question, "Who is healthy and when"?[4]

Although many factors are operative, no doubt, in the development of carious teeth, we are too prone to take the child's diet for granted or to focus our attention on one nutritional element and neglect others. It would appear that a fundamental need of the pregnant and nursing mother, the nursing infant and the school child is an adequate supply of protein. This dietary element, combined with other food constituents in adequate amounts, should constitute a good beginning in preserving the health of the school child and in preventing dental caries and its resultant impairment of health.

Recent studies of the use of Fluorine have produced promising results in prevention of dental caries, as high as an average of 40% being reported from controlled studies. It is recommended that four applications of 2% Sodium Fluoride be made to the teeth at ages 3, 7, 10 and 13. Through the U. S. Public Health Service the use of this method of prophylaxis is being encouraged. Syracuse is fortunate in having one of the thirty-eight or more teams consisting of a dentist, two dental hygienists and a clerk assigned to the city to demonstrate the technique of making applications. Although the procedure is quite time consuming, it is estimated that one hygienist should be able to complete a series of four applications for each child at the rate of 7 to 10 children each school day.

The seriousness of dental caries as a health factor is indicated by the number of rejections from military service during the recent world war. Dental defects headed the list, accounting for 20% of

3. Halbane, Professor; Quoted by Cole, R., Proc. Inst. Med. 11:2-20 1932.
4. Carlson, A. J.: Illinois M. J. 84:211 Sept. 1943.

the rejections. It would be interesting to know how many rejections from other causes may have been indirectly related to dental defects.

It is known by physicians and dentists, but not sufficiently realized by the public, that there is a direct relationship between dental infections and systemic disease. At one time, however, teeth as foci of infection were over-emphasized and many unwarranted extractions resulted. The pendulum appears to have swung too far in the opposite direction, and there is a tendency to disregard the teeth as foci of infection in systemic diseases.

Periapical infections are not uncommon in children and constitute the major dental foci from which infections may spread. Periapical infections are not infrequently responsible for bacteriemia with localization in distant structures. Whereas, systemic diseases may result from dental infections, the converse is equally true, namely, that many diseases cannot be successfuly treated if the child has an infected tooth or spreading periapical infection. Such diseases as hypochronic anemia, diabetes, rheumatic heart disease and nephritis often fail to respond to the usual therapeutic measures until infected teeth are removed. An abscessed tooth may cause such symptoms as chronic fatigue, loss of weight, anemia, rheumatic pains, neuralgia, etc. These same symptoms may be produced by any other type of chronic low grade infection like infected tonsils, sinus trouble or diseased gall bladder.

Recently under the title "Teeth and Skin Diseases", three New York dermatologists in an article in the N. Y. State Journal of Medicine discuss the role of teeth in skin diseases.[5] They point out that conditions of the teeth affect the skin from infancy to old age. (1) Infantile eczema may be produced or exaggerated by deciduous teeth. (2) Alopecia areata (bald areas) of the scalp may be caused by teething and impactions. They give a case report of a girl of 17 who had three impacted wisdom teeth causing this condition. Extraction of the teeth resulted in return of the hair within eight weeks. (3) Postular eruptions, eczema or recurrent furunculosis may be caused by abscessed teeth. (4) Older people are subject to a number of other skin conditions from focal dental infection.

Many people have the mistaken idea that for a tooth to be abscessed, it must have some visible signs of infection or decay. Actually this is not the case as many badly abscessed teeth appear to be perfectly normal. The only certain way of determining the

5. Andrews, Domonkos & Hopper, New York City, N. Y. State Journal of Medicine, Sept. 15, 1948. Vol 48, p. 2029. "Teeth and Skin Diseases".

presence of an abscessed tooth is by x-ray examination, since the ordinary clinical examination does not determine the condition of the tooth's roots.

The school physicians and nurses assist in many ways in the dental health program and one of the more important of these is in the control of communicable diseases. It is well known that growth and nutrition are disturbed by these diseases and many times the teeth of the child are permanently affected. Immunization procedures play an important part in this program as well as the early detection and exclusion of affected children so as to prevent the spread of communicable diseases from child to child.

The role of deficiencies in the diet as a contributing cause of dental caries has been mentioned. One must consider the fact that children with infected, maloccluded, or missing teeth may not be able to masticate their food properly and, therefore, not only may dietary deficiencies be intensified but gastro-intestinal disturbances may also develop.

The psychological effect on the child of unsightly teeth, or missing teeth, is a factor that must not be overlooked because it may influence to a considerable extent the child's eventual success or failure in school and ultimately in life. Even speech may be affected.

Dento-facial deformities of a greater or lesser degree have been observed in 50 to 85 per cent of children of school age during school surveys. These range from a single malposed tooth in an otherwise perfect arch to ugly deformities with involvement of the bones of the face, further aggravating the anomaly. Such abnormalities demand attention early in life, not only because the bones and teeth are in a plastic state, but also for psychological reasons in moulding the future of the individual.

Several studies have shown that the two most important obstacles to be overcome in dental health programs in most communities are (1) lack of facilities for low cost or free dental attention and (2) lack of understanding of the importance of dental care and unwillingness to co-operate in efforts to obtain it.[2]

School physicians, dentists and dental hygiene teachers should give serious attention to developing or improving community preventive and treatment facilities to combat dental diseases. These same school health workers and the school nurses and classroom teachers must continue to present the story of what good dental care is and its importance to growth and development in ways which will lead to action on the part of the child and his parents.

2. Op. cit. See page 18.

Conclusion: Poor teeth and an unhygienic mouth constitute both a social and economic liability. Prevention is always better than treatment, and in this paper the importance of diet, especially protein, and fluorine applications have been mentioned. Local, systemic and psychological effects of dental defects are also pointed out. It is urged that all school personnel take an active part in developing or improving community preventive and treatment facilities. They should also continue to participate in an educational program to lead to action on the part of the child so that he will get dental attention.

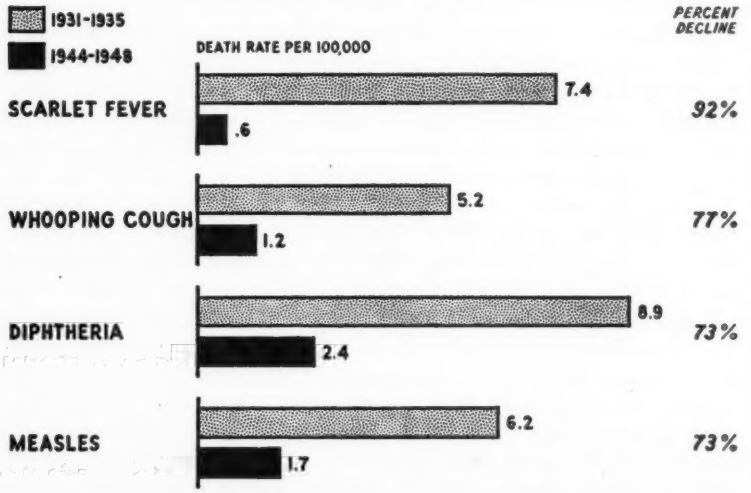
Let me express appreciation to Dr. Ralph R. Scobey, one of our school physicians, for assistance in preparing this paper and for the nutritional studies he made.

* * * * *

PRINCIPAL COMMUNICABLE DISEASES OF CHILDHOOD*

Decline in Adjusted Death Rates from 1931-1935 to 1944-1948

Metropolitan Life Insurance Company, Weekly Premium-Paying Business
Ages 1 to 14 Years



*Reprinted from Statistical Bulletin — Metropolitan Life Insurance Co., February, 1949.

DIAGNOSTIC VALUES TO PUPILS OF HEALTH EDUCATION TESTS

By WILLARD WALTER PATTY

Dean of School of Health
Physical Education and Recreation, Indiana University

Administering health education tests to pupils without diagnosis and remedial work is virtually valueless. Such a procedure is like that of administering health examinations of pupils—medical, dental, physical, psychiatric, and health history — without follow-up and corrections.

It is generally conceded that the most thorough health examinations of pupils are of little worth if only recorded and filed. "Follow-up" with pupils and parents by teachers, school nurses, and administrators adds value — at least of an educational nature. The real purposes of this phase of a health service program are achieved, however, when the defective pupils are taken to the family physician, dentist, or psychiatrist and their individual defects diagnosed and appropriate treatment administered.

Is not "preventive" health work as deserving of scientific handling as corrective service? Does not each pupil need health education tests as well as health examinations? Should not the teaching staff diagnose health education defects of pupils in a detailed manner even as the private practitioners diagnose after examining their patients? *The remedial work based upon accurate diagnoses of pupils' health education test results by the health educator is of paramount importance* just as correct treatment of patients in accordance with accurate diagnoses of examination results is the culmination of the service of the physician.

Diagnosing for Groups of Pupils — One practical use of health education results is that of group diagnosis. A test may be administered for such a purpose under two different circumstances: (1) at the beginning of the course, and (2) one or more times during the course, but before its end.

Diagnosis of preliminary test results. In order to be most effective the health education test given to the class at the beginning of a course should be one constructed in accodrance with the tentative outline for the course.

The pupil develops in health education — knowledge, habits, and attitudes — through the years in a progressive manner similar to his or her normal physical development. The specific outcomes of health education expected for the various grades should differ

according to the needs, interests, and comprehension ability of the children in the respective grades.

Let us consider the "group diagnostic" procedure, first, for the teacher who constructs a test for a particular grade — grade five. The major steps in "group diagnosis" would be as follows:

1. Administer the test to class at first meeting.
2. Collect test papers and score same.
3. Tabulate results, showing number of pupils or per cent of class making incorrect answers to each question.
4. Eliminate from plans for the health education program of that year those items concerning which all pupils give correct answers.
5. Reserve for individual instruction those items concerning which only a few make errors.
6. Stress in health education activities during the year those items unfamiliar to the majority of the class.
7. Administer the same or an equivalent test before the end of the year.
8. Do such group and individual remedial teaching as results of the second test warrant.

Such a "group diagnosis" procedure has at least four special values. First, it convinces the pupil that the health education course of study subject matter contains information that he does not already know. Second, it reduces "boredom" of pupils. Third, it permits the class to spend more group time per item to be learned that year. Fourth, it makes possible the teacher's use of a greater variety of methods to assist the class in learning of items unknown to a majority of the group.

Where the teacher uses a test which is planned to be used in several grades, his procedure should be similar to the eight steps mentioned heretofore. One additional duty for the fifth grade teacher would be to notify teachers of lower grades of the errors made by a considerable portion of the class concerning items supposed to have been learned in preceding grades. A major variation from the steps outlined would be that the fifth grade teacher would disregard both for group and individual instruction those items allocated by the course of study to higher grades, even though the questions were answered incorrectly by all or many of the fifth grade pupils.

Example of Group Diagnosis

Perhaps the presentation of an actual example of an analysis of errors made by a fourth grade might be of interest. The test

used includes sixty "best answer" type questions — each question having five alternative responses.

TABLE I

A Health - Knowledge Test (3-8)
Blank School, Fourth Grade
49 Pupils Took Test

No. of Question	Frequency of Missing	
1	5	
2	3	
2	6	
4	12	
5	5	
6	5	
7	11	
8	25	
9	33	(3)*
10	26	(1)
11	28	
12	10	
13	2	
14	3	
15	4	
16	29	
17	7	(2, 4, 5)
18	10	
19	31	(4)
20	36	(1, 2)
21	31	(1)
22	15	
23	34	(4)
24	42	
25	3	
26	20	
27	21	
28	25	
29	12	
30	14	
31	22	
32	23	
33	3	
34	42	(5)
35	33	(1)
36	33	(5)
37	24	
38	32	(5)
39	24	
40	17	
41	38	(1)
42	30	(4)
43	28	(5)
44	25	(1)
45	35	(1)
46	34	(4)
47	21	
48	23	
49	32	(2, 3, 4)
50	13	
51	29	(1)
52	36	(2)
53	12	
54	31	(5)
55	19	(1)
56	39	(1, 2, 5)
57	26	
58	19	
59	21	(1)
60	34	(1)

* Numbers in parentheses show the alternate answers most frequently given in error.

Using the group diagnosis procedure it is apparent that:

1. Nearly all members of the class knew correct answers to questions 1, 2, 3, 5, 6, 13, 14, 15, 17, 25 and 33. These items may be eliminated from the group health education plan for this year.
2. The teacher should ascertain which of the items concerning which errors occurred are allocated by the course of study to higher grades. Such items would not be included in the year's plan for group learning.
3. Alternate answers most frequently given in error may be properly discussed with the group in order to correct misconceptions, if the item does not belong in higher grades.

Diagnosing for Individual Pupils

Individual diagnostic values of health education test uses differ materially from group diagnostic values. To be sure, there are several similarities.

Individual diagnosis procedures in using health education test results are comparable to group diagnosis activities in that:

1. Analysis of test results reveals imperfections in attainment of outcomes expected.
2. Diagnosis indicates where to apply emphasis in teaching.
3. Both diagnostic procedures contribute to economy of time of learner and teacher by permitting avoidance of purposeless repetitive learning activities concerning lessons already mastered by the majority of the class.

Diagnosing for individual pupils varies from group diagnosis in a number of respects:

1. The test for individual diagnostic purposes is normally given after the unit has been covered by group health education procedures.
2. The major purpose of individual diagnostic uses of test results is to furnish evidence to do remedial teaching for each child, while the chief purpose of group diagnosis is to adapt group instruction to the current class. *Individual diagnosis helps the child: group diagnosis helps the course.*
3. Individual diagnostic use of test results is followed by individualized remedial health education in an attempt to enable each pupil to achieve desired outcomes. Group diagnosis is followed by adapted group education and usually with individual diagnosis and remedial instruction as a supplementary activity. It is true, however, that

either form of diagnostic use of tests may be used without the other. Both are recommended.

4. The chief purpose of individual diagnosis based upon health education test results is to enable the health educator to prescribe appropriate individual health education remedies. In principle the health educators' work here is like that of the family physician, who diagnoses and prescribes remedies for his patient after studying results of a health examination.

Examples of Individual Diagnoses — For examples of individual diagnostic uses of health education tests the test papers of two high school pupils have been chosen. The boy's paper is a form of health knowledge test which is recommended as suitable in grades 7 - 12.* The girl's paper is a form of "health attitude scale" said to be appropriate for students in the last three years of high school and the first two years of college.

Health Knowledge Test. The boy whose case is shown was 17 years and 10 months old. He was in grade 12B of high school. The test was administered to all high school health classes.

The test consisted of sixty "best answer" type questions — each with five alternate answers from which to choose one response. Dale S. made errors in answering questions 6, 13, 25, 26, 39, 52 and 58. He made no attempt to answer questions 28, 29, 30, 31, 32 and 33. Of these questions all but two concerned foods and their health values. Number 13 referred to hazards in occupational situations. Number 58 was a physiological question concerning which he indicated that the liver (rather than the kidneys) was "the organ chiefly responsible for maintaining the right amount of each essential substance in the blood."

Is it not apparent that Dale S. has a pronounced weakness in the nutritional phase of his health education? This may be due to unfavorable home nutritional environment. He may have missed classes during the time when the nutrition section of the course was presented. He may have been indifferent during those lessons and may have made little effort to learn. The fact that he made only two errors outside the nutrition items indicates ability and general interest in learning for health. These tentative conclusions are drawn with the assumption that the test was adapted to the course as taught.

* The author believes that no test can possess a high level of validity when it attempts to measure health knowledge for such a wide range. Extraneous factors such as vocabulary burden of the test, differences in educational background, and differences in maturity of pupils lower the validity of such a test.

In order to complete the individual diagnosis, the teacher should have a private conference with Dale. It makes a significant difference in the teacher's remedial teaching responsibility if he finds that Dale had no opportunity to learn the facts tested rather than that Dale has a wrong attitude toward the importance of nutrition to health.

Since Dale S. is in the twelfth grade, it seems clear that his teacher should plan remedial work to attempt correction of all health education defects revealed by the test.

Health Attitude Scale. The girl whose paper is selected, from the classes taking the test, is 15 years of age. She is in grade 10A of high school.

The "scale" consists of 100 statements — each with five alternate responses. The responses, of which the student is to underline the best answer, are: "strongly agree", "agree", "undecided", "disagree" and "strongly disagree".

Kay T. failed to indicate the best answer for eighty out of one hundred questions — according to the test. However, her answers were right in principle, but too conservative in degree, in seventy of eighty imperfect choices. It would seem that her information was reasonably accurate, but that her emotional feelings concerning these items of health knowledge had not been developed sufficiently.

She indicated that she was "undecided" in four instances. This was never the "best answer". Two of these questions concerned the regularity of bowel movements and of time for going to bed. One proposed change of diet as an attempt at curing cancer. One suggested that a smoker of tobacco use a filter in his pipe. Apparently these incorrect answers are due to lack of scientific knowledge.

Her answers to five questions were wrong in principle, although not to an extreme degree. Two of these concerned the smoking of tobacco by boys and by pregnant women. Two answers indicated a tendency to rely upon self-medication rather than seeking professional service in case of need. In one instance she disagreed with the statement that the law should prohibit advertisements of "cancer cures". These answers suggest prejudice as the chief cause of incorrect answers. An individual conference might reveal a lack of scientific knowledge.

Kate T. gave the worse answer possible to one question. She strongly agreed with the statement that "a person should be entirely responsible for his own health." If she understood this

question, her answer seems to indicate both lack of knowledge and of correct attitudes toward relationships that should exist between an individual layman and members of health professions.

Variance in Diagnostic Procedures

It should be noted that there is a significant difference in procedures to be followed after health education test results have been used for individual diagnosis of high school students — or adults — as compared to elementary pupils. It seems sound to assume that, for most high school students, this course will be the last participation in formally organized health education.

In the case of the elementary school pupil the teacher may well use two major steps in completing the diagnostic procedure pattern: (1) include items for remedial teaching of each pupil if the items are allocated by the course of study to the grade concerned or to a lower grade, and (2) disregard health education needs revealed by the test if the items concerned are responsibilities of teachers in higher grades. In contrast, the health educator in high school should attempt to remedy all health education defects revealed.

Remedial Teaching — Diagnosis is not an end in itself. It is only a means to an end. In the health education program the diagnostic use of test results reveals the specific nature of remedial teaching needed.

Should not interpretations of test results be positive as well as negative? Is not "success" a potent factor to be used in urging a learner to additional effort? It is recommended that the health educator stress the successful achievements of each testee while completing his diagnosis in conference. The learner should then be favorably disposed to needed remedial health education procedures applied to his case.

Remedial teaching procedures should follow individual diagnosis, but are not technically part of it. An elaboration of remedial teaching techniques here would seem to be inappropriate.

Suffice to say here that the remedial teaching to which diagnostic use of health education tests contributes would deal with improvement of two kinds of outcomes: (1) knowledge, and (2) attitudes. The methods and devices used in remedial teaching would include: (1) individual factual instruction, (2) individual and group supervised health activity experiences, (3) psychological appeals, and other procedures adapted to the specific needs, interests, and comprehension ability of each learner.

Selected Sources — Bloomington, Indiana, School Health Survey, W. W. Patty and others. (Unpublished).

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RHEUMATIC FEVER AND THE SCHOOL CHILD*

A Statement to Guide School Health Authorities

This joint report of the Committees on School Health and Rheumatic Fever of the American Academy of Pediatrics has been prepared as a guide to school authorities in determining what can be done about this disease through the schools.

The school occupies a unique position in relation to rheumatic fever control. Rheumatic fever causes more deaths than any other disease in children of school age. A first attack usually occurs in children at the age when they are in the first or second grade and recurrences are most common up to the age when children are leaving high school. The insidious onset of so many cases during the school years suggests that teachers and others in daily contact with school children should be aware of early signs and symptoms which may mean acute rheumatic fever.

The periodic school health examination when done hastily without removal of clothing may miss children with rheumatic heart disease. On the other hand, children may be labeled with the diagnosis of a rheumatic heart because a heart murmur was wrongly interpreted. This serves to emphasize the opportunities as well as the difficulties of discovering rheumatic fever and rheumatic heart disease in school children.

Improvement of School Medical Procedures

The American Academy of Pediatrics believes the problem of what to do about rheumatic fever through the schools is an integral part of what should be done about the health of all school children. The following recommendations, while pointed towards case-finding and health supervision of the rheumatic child, will, if applied, lead to better health service for all school children.

The periodic school medical examination should be improved:

1. By obtaining a health history of the child from the parent and the teacher, if possible, at the time of the child's examination.
2. By being performed without haste and with the child disrobed.
3. By the employment of physicians trained in pediatrics, if possible. Where this is not feasible, arrangements should be made for giving physicians who make school medical examinations additional clinical training in normal child

* Special report from the Committee on School Health and the Committee on Rheumatic Fever, Rheumatic Fever and the School Child, Am. Acad. of Pediatrics.

growth and development as well as in children's medical problems including rheumatic fever and heart disease.

4. By allowing time for the physicians to plan with the nurse and parent for medical attention. The examination is then more likely to be of greater aid in getting medical care for school children who need it.

The follow-up activities of the nurse should be to see that the children in need of medical attention are referred to physicians, and that every effort is made to have needed care given. Special health and welfare resources in the community should, if necessary, be brought to the attention of the family and the child's physician.

Daily Observation of Children With Special Reference to Rheumatic Fever

Nurses and teachers should be more alert to substandard health in all school children. School absence due to illness or vague disorders, if investigated, may disclose early cases of acute rheumatic fever. In order to make use of the school's daily contact with the child, there should be daily observation of pupils for signs and symptoms suggestive of substandard health. Among these signs and conditions which should bring children to the attention of the teacher or parent are:

1. Failure to gain weight
2. Pallor
3. Poor appetite
4. Fatigue
5. Frequent colds and sore throats
6. Tonsil and adenoid operations (because it may indicate previous sore throats)
7. Scarlet fever or any known streptococcal infection
8. Unexplained nosebleeds
9. Unexplained fever
10. Pains in arms, legs, and joints
11. Unusual restlessness, irritability, twitching or jerky motions
12. History of previous rheumatic fever
13. Behavior and personality changes
14. Decreasing accomplishments in school by a child who has previously done well.

Children reported by the teacher as showing evidence of substandard health should be medically reviewed by the school nurse or physician to select children who need further medical investigation. A personal interview by the school physician or nurse with

parents either in school or through a home visit is recommended to emphasize the need for further medical attention for the child through the physician of the family's choice.

Schools have tended to place too much emphasis on the finding of a heart murmur in the child. This has resulted many times in needlessly restricting the child's physical activities.

Relatively few rheumatic children attending regular school in the intervals between attacks need to have their physical activity restricted. In a group of 1,000* rheumatic children seen ten years after they first came under observation, 783 were alive and of these, more than 80% were able to lead normal active lives except in competitive sports. More than half were able to engage in competitive sports.

Preparation of Teachers in Health Guidance

Teachers should know more about children's health problems, including rheumatic fever. Not only should they be able to recognize children with signs and symptoms of substandard health, but also they should realize the importance of protecting children, especially the rheumatic child, from respiratory infections. Children with early signs of upper respiratory infections should be encouraged to stay home. Health education is especially important for the rheumatic child because the chronic nature of the disease requires, as in tuberculosis, that the susceptible individual learn the special importance of good hygiene. Preparation in health guidance should be given both to teachers in training and to teachers in service. The American Academy of Pediatrics will be glad to cooperate by helping school authorities to locate pediatricians to assist in programs of teacher-training in health.

Rheumatic Fever Diagnostic Service

Because of the difficulty of diagnosing rheumatic fever and rheumatic heart disease, and especially the important point of determining whether or not the process is active, special diagnostic facilities should be available to all physicians, including school physicians, who may advise parents concerning care of children with possible, potential, or definite rheumatic heart disease. Diagnostic facilities should have the approval of local medical societies. The consulting specialist in rheumatic fever should have electrocardiographic, fluoroscopic, and other necessary laboratory facilities. Every effort should be made to bring this diagnostic service

* Jones, T. D. and Bland, E. F., Rheumatic Fever and Heart Disease; completed ten-year observations on 1,000 patients, Tr. A. Am. Physicians 57:265, 1942.

to the attention of physicians who take care of school children. A complete report of the specialist's examination should be sent to all physicians concerned with the care of the child.

The purpose of this service is not only to diagnose rheumatic fever and rheumatic heart disease and to make recommendations as to the health and educational services needed by the child, but also to screen out those children who have heart murmurs but who do not have organic heart disease. It is also useful in regard to placement and removal of children in special schools and classes for the handicapped.

Cooperation With Community Health and Welfare Agencies

Adequate health services for school children calls for close working relationships between medical, public health, social welfare, and educational authorities. The school can improve its services to children by utilizing, at every opportunity, community resources — for example, the use of the clinical teachers of a local medical school to give courses to school physicians, the use of laboratory and clinic services of community hospitals for diagnostic and consultation service, the provision of home or hospital education for children who are bedridden, communication with welfare authorities concerning inadequacies in the home environment. These services should be made available to all, but without waste of professional services and of public funds. Close cooperation between the physician, family, school, and other community health and welfare resources is essential.

Recommendations

The school gives an unusual opportunity to attack rheumatic fever. Certain improvements in school health services are needed to make the best use of this opportunity. These recommendations of the Academy will not only be a better approach to rheumatic fever, but to other health problems of children. The alertness of teachers and school nurses can bring to medical attention children with signs and symptoms suggestive of rheumatic fever whose condition might otherwise be overlooked. It is also an opportunity through periodic medical examinations to discover unrecognized damage to the heart, and to keep under medical supervision known cases of the disease and to make family studies of rheumatic children. It is an opportunity to teach the principles of healthful living to children who have the disease or who are susceptible.

To aid school health authorities to develop a more rational approach in the control of disease, the Committees on School Health and Rheumatic Fever of the American Academy of Pediatrics

recommend: (1) that the school medical examination be improved to aid in more accurate recognition and supervision of rheumatic children, (2) that more emphasis be placed on referral by teachers and nurses of pupils believed to be below-par for medical review, (3) that less emphasis be placed on restricting the physical activity of rheumatic children and more attention given to daily observation of pupils for signs or conditions suggestive of rheumatic disease, (4) that there be available, to school health services and the practitioners, diagnostic and consultation services to establish diagnosis, (5) that these services be developed in cooperation with, and by utilization of, existing medical and public health resources in the community.

American Academy of Pediatrics

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* * * * *

Bureau of School Health. — Under the recently organized Bureau of School Health, New York City doctors are supplying medical service to a million pupils in the elementary, parochial, junior high, vocational high and thirteen of the academic high schools in the city. The bureau, under the direction of Dr. Robert Culbert, expects to add 50 doctors to its present staff this year and to fill vacancies for 100 nurses. The elementary school medical service consists mainly of twenty minute routine examinations of newly admitted pupils with their parents present for consultation. In the first year of the program it is estimated that at least 50,000 pregraduation examinations will be given at the school and 25,000 by private doctors. The bureau also plans to gradually extend its services to all academic high schools. Journal-American Medical Association, February 12, 1949. Page 468.

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EDITORIAL

The Twenty-Seventh Yearbook of the American Association of School Administrators is entitled "American School Buildings."

It offers excuse, if any be needed, for further discussion of the present often dangerous, insanitary and inadequate (from the health viewpoint especially) school buildings.

The bad conditions, that are not rare, are due to (1) antiquated buildings (some were built in the early 1860's and are still in use), (2) almost total neglect of modernization or maintenance, (3) cheap construction or (4) faulty planning.

Any school building fifty years old or more, and not thoroughly remodelled since, needs such thorough remodelling now that probably it would be safer and cheaper to tear it down and replan and rebuild. Modern essential facilities for health and education require a great deal of added space. Proper fire proofing and safety are almost impossible to build into these old dangerous buildings.

Keeping a school building up to date and maintaining it in a safe and sanitary condition is a continuous job. After years of neglect, to resuscitate a constantly used school house is expensive and often disheartening. Frequent repairs and improvements keep the plant at its highest efficiency, spread the economic load over many years, and give the pupils a more esthetic environment.

In a building that—properly cared for—is to serve several

generations, cheap planning and construction are many times wasteful and therefore—in the long run—highly expensive.

Without a modern concept of education, it is well nigh impossible to carry on "modern" education. We have erred, too, in emphasis. Partly because enrollment in secondary schools has increased so phenomenally in the last thirty years, and possibly too because the parents of secondary school pupils are more mature in position and influence, millions have been poured into elaborate space-wasting secondary school buildings, while those for the younger elementary school pupils have been neglected, if not largely ignored. This is putting emphasis in the wrong place.

The secondary school pupil will learn in spite of poor buildings and even in spite of poor teaching. The elementary school child needs protection and help.—*C. H. K.*

* * * * *

ABSTRACTS

If Polio Hits Your Area This Year,—*Avoid crowds and new contacts* in trains, buses or boats, if possible; avoid crowded places where you may be close to another's breath or cough.

Avoid over-fatigue, too active play, late hours, worry, irregular living schedules may invite a more serious form of the disease.

Avoid swimming in water which has not been declared *safe* by your health department.

Avoid chilling. Take off wet clothes and shoes at once. Keep dry shoes, sweaters, blankets and coats handy for sudden weather changes.

Keep clean. Wash hands after going to toilet and before eating. Keep food covered and free from flies and other insects. Burn or bury garbage not tightly covered. Avoid using another's pencil, handkerchief, utensil or food touched by soiled hands.

Quick Action May Prevent Crippling

Call Your Doctor at once if there are symptoms of headache, nausea, upset stomach, muscle soreness or stiffness, or unexplained fever.

Take His Advice if he orders hospital care; early diagnosis and prompt treatment are important and may prevent crippling.

Consult Your Chapter of the National Foundation for Infantile Paralysis for help. Your Chapter (see local telephone book or health department for address) is prepared to pay that part of the cost of care and treatment you cannot meet — including transportation, after-care and such aids as wheel chairs, braces and other orthopedic equipment. This service is made possible by the March of Dimes.

Remember, facts fight fears. Half or more of those having the disease show no after-effects; another fourth recover with very slight crippling. A happy state of mind tends toward health and recovery. Don't let your anxiety or fear reach your children. Your confidence makes things easier for you and for others.

— CUT OUT AND KEEP FOR REFERENCE —

* * * * *

REVIEW

Your Child or Mine: The Story of the Cerebral-Palsied Child. *Mary L. H. Burton,* with *Sage H. Jennings.* Conrad-McCann, Inc., New York, 1949, pp. 64, $1.25.

This text is an effort to answer the questions regarding the cerebral-palsied, "How does his family ever take care of him?" "Is he feeble-minded?" "What makes him this way?" "Can he be cured?" and many other questions that arise concerning these unfortunates. It uses the "case method", presenting the stories of six children with cerebral palsy, giving history, diagnosis, method of treatment, progress and possibilities.

This report presents in simple language the conditions and hope for these children and their families.

It fills a great need for an understandable presentation to parents of the possibilities and needs in this field of education.— *C. H. K.*

* * * * *

MEETINGS

The State Society of Directors of Health, Physical Education and Recreation, Boston, Mass., April 16, 17, 18, 1949.

The American Association of Health, Physical Education and Recreation, Boston, Mass., April 17-23, 1949.

The **American School Health Association** and the American Public Health Association, New York, N. Y., October 23-28, 1949.

Wisconsin will be host to the **Middle States Region Health Educators' Conference** in Milwaukee on May 11 and 12. Panel sessions will highlight discussions on Health Councils, School Health Programs, Health Education Media, and Rationing the Time of the Health Educator. Special sessions will be devoted to presentations on Mental Health and on Group Dynamics. All meetings will be held at the Pfister Hotel.